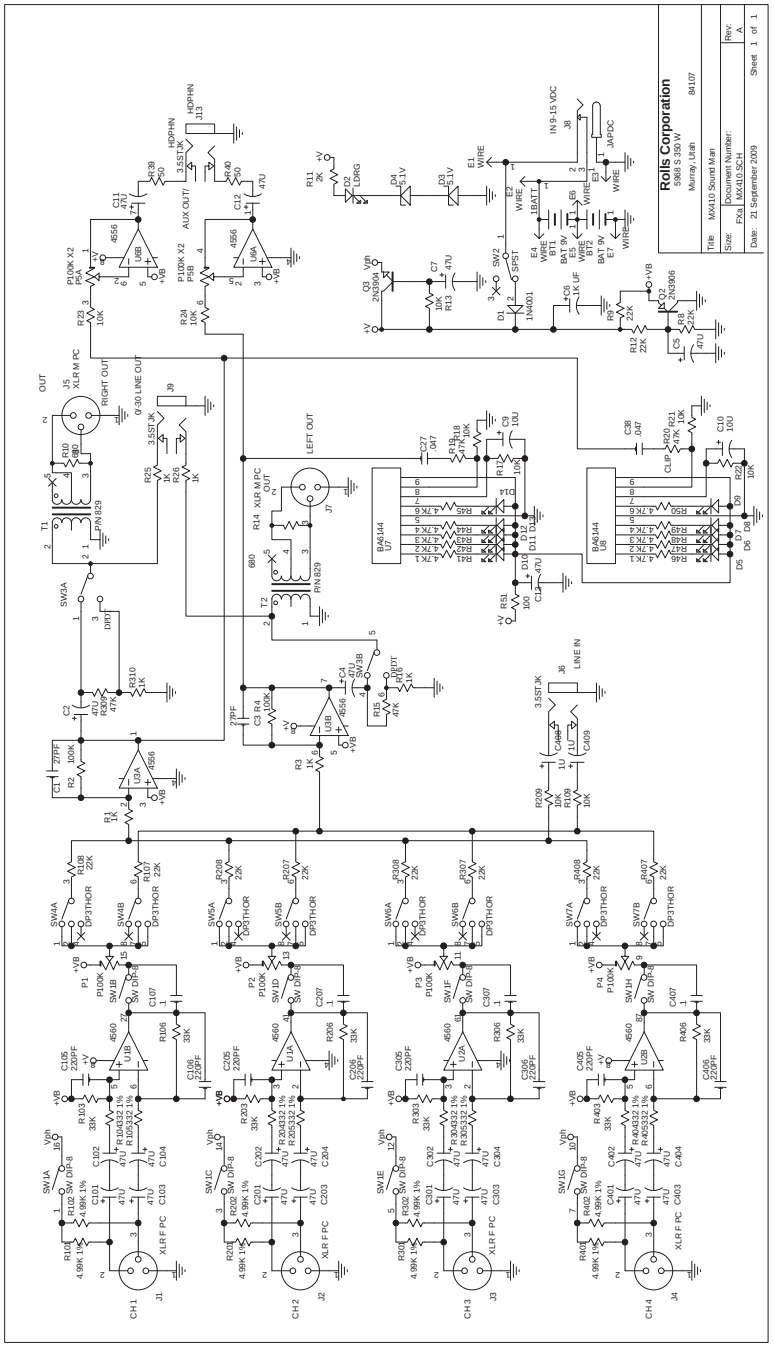
SCHEMATIC

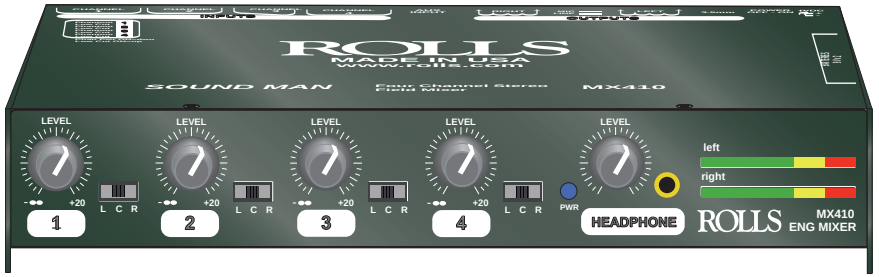


ROLLS

ROLLS CORPORATION
SALT LAKE CITY, UTAH
6/11

ROLLS

MX410
Field Mixer



NOTE: THIS MANUAL ASSUMES THE USER HAS A WORKING KNOWLEDGE OF AUDIO ELECTRONICS, BALANCED AND UNBALANCED CONNECTIONS, AND PROPER SIGNAL LEVEL SETTINGS. FOR PROPER SETUP AND USE CONTACT YOUR DEALER.

ROLLS CORPORATION
5968 South 350 West
Salt Lake City, UT 84107
Phone (801) 263-9053
FAX (801) 263-9068
www.rolls.com

Quick Start Guide

Thank your for your purchase of the Rolls MX410 Field Mixer; Professional ENG mixer. Please read and review this manual carefully as it contains important information regarding the proper use and care of the MX410.

INSPECTION

1. Unpack and inspect the MX410 box and package.
If obvious physical damage is noticed, contact the carrier immediately to make a damage claim. We suggest saving the shipping carton and packing materials for safely transporting the unit in the future.
2. Please visit our web site at www.rolls.com and click on the Register Your Warranty Here button.

SPECIFICATIONS

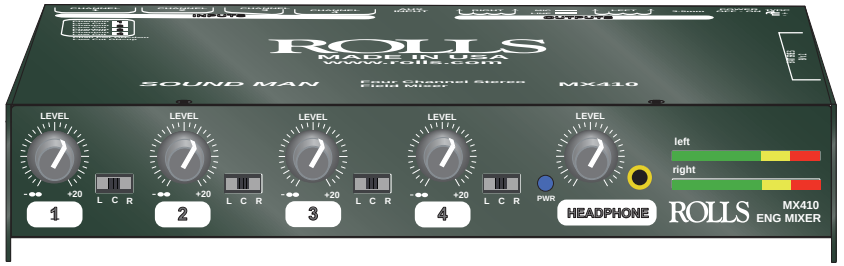
Input Impedance:	Mic:	600 Ohms XLR balanced
Output Attenuator:		-30 dB
Self Noise:		-65 dB maximum
		-90 dB typical
Max Gain:		+55 db
S/N Ratio:		115 dB
THD:		.05%
Frequency Response:		20 Hz - 20 kHz | +0, -3 dB
Low Cut:		100 Hz
Max Input:		-20 dBV
Current Draw:		30 mA with no Phantom Power or Signal.
Phantom Power:		+18 VDC
Typical Battery Life:		18 Hrs. (2 mics, phan on, with headphone)
Connectors:	4 ea. Female XLR, 2 ea. Male XLR,	
	3 ea. 1/8" (3.5mm), 1 Center Negative power jack.	
Power Adapter:	12VDC / 200 mA	
Size:	9" W x 6.75" D x 1.5" H	
Weight:	2.45 lbs	

LOW-CUT FILTERS

Each channel of the MX410 features a switchable Low-Cut filter set at 100Hz. These Low-Cut filters (sometimes called "High Pass") cut frequencies below 100Hz signal and are effective for reducing wind noise. For several audio applications engaging the Low-Cut filter is beneficial, since little usable audio information exists below 100 Hz. Especially for speech recording.

PHANTOM POWER

The MX410 can provide up to 10 mA of current to each input, sufficient for the most power-hungry condenser microphones. The MX410 Phantom Power utilizes a fixed DC voltage which is resistively applied to pin-2 and pin-3 of an XLR input connector relative to pin-1 (there is no voltage difference between the signal on pins 2 and 3; a dynamic microphone may or may not operate normally in the presence of phantom power).
It is generally a good practice to turn off phantom powering when not using a condenser microphone, as it can capacitively couple noise into the mic inputs with poor mic cables. Also, be sure to turn off phantom powering when using ribbon microphones since an improperly wired cable can permanently damage the microphone.



Trouble shooting: The MX410 is designed to be an easy to use full function mixer. PLEASE MAKE SURE THAT THE REAR MIC/LINE SWITCH IS IN THE CORRECT POSITION FOR YOUR INTENDED USE.

POWERING

We recommend using 9V alkaline type batteries, however Lithium or NiMH batteries work as well.
For AC power, Rolls provides the model # PS27 12 VDC supply to power the MX410.

INPUT CHANNELS

The inputs to the MX410 consist of four, microphone preamplifiers. Each channel has sufficient gain to accommodate nearly all microphone types.
The MX410 input channels can be used with balanced or unbalanced connections. When unbalancing - ground pin-3 to pin-1.
The AUX INPUT jack is provided for recording stereo sources such as CD players, MP3 and DVD players, etc.

OUTPUTS

The MX410 is designed with two individual balanced male XLR output jacks. Each output is isolated providing excellent signal connectivity and noise performance.
These outputs are generally connected to a recording device or other input looking for a line-level signal. In the event you need to connect the MX410 output to a mixer's Microphone Input, set the Output Level select switch to MIC level. This way the MX410 output is attenuated down, and will be more compatible with an input looking for a microphone level signal.

INDIVIDUAL CHANNEL LEVEL CONTROLS

The Level is the primary channel volume control. Level can be set to a nominal level (around 12 O'clock) providing the maximum amount of variance and headroom.

L C R SWITCHES (Left - Center - Right)

The Stereo orientation switches routes an input channels signal between the Left, Right and both outputs.

METERING

The MX410 features two calibrated, LED meters. Meter ballistics correspond closely to how the human ear perceives loudness and provides a good visual indication of how loud a signal will be.

- Four balanced XLR Inputs
- Two transformer-balanced XLR Outputs
- Switchable Output Level (Line level, or Mic level)
- 1/8" TRS Stereo Auxiliary Input
- Switchable Phantom Power for each input
- Switchable 100 Hz Low Cut filters for each input
- Dual 9V easy access Battery compartment
- Level controls for each channel
- 1/8" (3.5mm) Headphone/Earphone Output with Level control
- 18 hour battery life (with 2 condenser mics using phantom power and head phones attached, constant use).
- Rolls PS27 external power supply included

QUICK START GUIDE

For those familiar with ENG or field mixers, this guide highlights basic functionality to begin operating your MX410.

POWERING

To power the MX410 and get it ready for operation:
1. Insert - 2, 9-Volt, alkaline batteries into the battery compartments. Insert with the correct polarity.
Or, connect external DC power (the Rolls PS27) 12 VDC to the MX410 DC Input connector.
2. Press in the POWER button.

INPUT CHANNEL SETUP

To set up a gain level for an input channel:
1. Connect a signal source (microphone) to a channel input connector.
2. If you're using a condenser microphone, activate the Phantom Power by depressing the phan switch.
3. Set the LEVEL Control at the 12 O'clock position (again - just a starting point).
4. Set the channel L C R switch for the desired signal position in the stereo field.
5. Engage the side panel "low cut" switch if needed. To reduce unwanted wind noise.
6. Verify there is signal present on the output meter(s).

OUTPUT CONNECTION

To connect to the MX410 main Outputs:
1. Connect an XLR cable to the LEFT and RIGHT Outputs of the MX410.
2. Set the output level switch to either LINE (switch in), or MIC (switch out).
3. Verify that the next device in the signal chain is receiving signal from the MX410.

HEADPHONE MONITORING

1. Connect stereo headphones to the HEADPHONE output on the front panel. NOTE: THESE MUST BE STEREO HEADPHONES OR EARPHONES - USING MONO PHONES WILL DAMAGE THE MX410.
2. Set the PHONES level to 0.
3. Verify signal in the phones by slowly bringing up the PHONES level control.
4. Set the PHONES level control to a comfortable level.

REAR PANEL CONNECTIONS

Connect your microphones to the MX410 using balanced XLR cables. Connect the MX410 Outputs to the next device in your signal chain (usually a recording device of some kind), also via balanced XLR cables.

For monitoring external signal sources, connect a stereo (Tip-Ring-Sleeve) plug to the Aux Input.

FRONT PANEL

LEVEL 1, 2, 3, and 4: Adjust the level of signal from the corresponding Mic Input.

L C R SWITCH 1, 2, 3, and 4: Adjusts the relative Right/Left signal level to the outputs.

HEADPHONE LEVEL: Adjusts the level of signal from the Headphone Output.

HEADPHONE OUTPUT: Tip-Ring-Sleeve 1/8" (3.5 mm) Tip-Ring-Sleeve jack.

IMPORTANT NOTICE: DO NOT PLUG MONO (Tip-Sleeve) PLUGS INTO HEADPHONE JACK. DOING SO WILL DAMAGE THE MX410.

REAR PANEL/TOP

12VDC / 100 mA: Power input connector. Connects to the optional Rolls PS27 Power Adapter.

POWER: Button - turns the MX410 on and off. This switch has been designed to not switch accidently. It is small and recessed by design, so it will not turn off until you intend to do so.

LEFT/RIGHT OUTPUT: Balanced XLR jacks containing the main mix signal. Pin 2 is configured "hot", pin 3 is neutral, and pin 1 is connected to chassis ground.

OUTPUT LEVEL (MIC / LINE): When pressed in, outputs are at MIC level when out the outputs are at LINE level. A 1/8" 3.5mm T R S jack is also provided for the output.

AUX INPUT: 1/8" Tip-Ring-Sleeve jack for connection to an auxiliary line-level stereo signal such as the output of another mixer, AM/FM tuner, CD player, etc.

INPUTS 1 - 4: Balanced XLR jacks for connection to dynamic or condenser microphones.

PHAN 1 - 4: When the switch is DOWN for the corresponding channel Phantom Power is applied to the corresponding Input. See top screening for explanation.

LOW CUT 1 - 4: When the switch is UP for the corresponding channel it reduces the low frequency (100Hz and below) of the corresponding Input signal. To decrease wind noise or popping.